

## CHAPTER 71. EVALUATE PART 121/135.411(a)(2) AIR CARRIER'S MAINTENANCE RECORDKEEPING SYSTEM

### SECTION 1. BACKGROUND

#### 1. PROGRAM TRACKING AND REPORTING SUBSYSTEM (PTRS) ACTIVITY CODES.

*A. Maintenance:* 3351/3302/3303

*B. Avionics:* 5351/5302/5303

**3. OBJECTIVE.** This chapter provides information for use during evaluations of maintenance recordkeeping systems, both on an initial approval basis as well as on a continuing compliance basis. Pertinent sections of Title 14 of the Code of Federal Regulations (14 CFR) outline the requirement for an air carrier's system for the preparation, storage, and retention of certain required aircraft maintenance records. The primary objective of these systems is the generation, storage, retention, and retrieval of accurate and complete air carrier aircraft maintenance records. These records exist, primarily, to show that the Certificate of Airworthiness of a particular aircraft is valid, therefore, airworthy and capable of safe flight.

**5. GENERAL.** The Standard Certificate of Airworthiness issued to a U.S.-registered aircraft is valid only as long as the maintenance, preventive maintenance, and alterations are performed according to the requirements of the pertinent regulations. In view of this significant requirement, aircraft maintenance records become especially important, since incomplete or inaccurate required aircraft maintenance records have the effect of rendering a Standard Certificate of Airworthiness invalid. Aircraft maintenance actions, in almost all cases, become intangible or abstract after the fact. Therefore, in order that an aircraft operator can make a maintenance action tangible, a record of that maintenance action must be made. In addition, the current airworthiness status of an aircraft is also supported by making a record of certain summary information. Moreover, these maintenance records are important to the FAA as the FAA uses its continuing review of aircraft maintenance records as a direct means of determining the accomplishment of maintenance, preventive maintenance, and alterations, thereby fulfilling, in part, its public mandate of ensuring the airworthiness and safety of aircraft. Furthermore, because the review of maintenance records is the only direct means of determining the accomplishment of the required maintenance, preventive maintenance and alterations, and, recognizing the extreme importance of making, and keeping accurate aircraft maintenance records, the U.S. Congress has established the act of intentionally failing to make and keep, as well as the act of

intentionally falsifying, mutilating, or altering air carrier aircraft records as a criminal act, subject to the imposition of substantial fines. In addition, persons intentionally falsifying or concealing, or inducing reliance on a false statement of material fact in an air carrier record, are subject to substantial fines, or imprisonment, or both. In view of the considerable importance of aircraft maintenance records, as emphasized by the severe statutory criminal penalties for aircraft recordkeeping and reporting infractions, as well as the statutory requirement for an air carrier to operate with the highest possible degree of safety in the public interest, the FAA expects air carrier records to be accurately produced, as well as complete and correct. When it is appropriate, FAA personnel should use the policy and procedures for handling criminal violations relating to air carrier records and reports that are contained in FAA Order 2150.3A, Compliance and Enforcement Program, Chapter 6, Criminal Investigations.

**7. REQUIRED AIR CARRIER AIRCRAFT MAINTENANCE RECORDS.** Over the years, air carrier aircraft maintenance record making and retention requirements have evolved from the minimal records of repairs and alterations required in the pre-WWII era, to the current requirements for a list of summary information and airworthiness release records. Currently, each air carrier is required to keep, using the system specified in 14 CFR part 121, 135, §§ 121.369 and 135.427, certain maintenance records for the time periods specified in §§ 121.380(c) and 135.439(b).

*A. Summary Information.* Air carriers are required to make and keep a list of certain summary status records as well as records related to the issuance of an airworthiness release and to transfer that information with the aircraft when it is sold. These specific records are listed and explained as follows:

(1) The "total time-in-service of the airframe, each installed engine, and each installed propeller." "Time-in-service" is defined in 14 CFR part 1, §1.1. Total time-in-service is a record that contains that time-in-service accrued

since new, or since rebuild, expressed in hours and landings or cycles.

(2) The “current status of each life-limited part” of each airframe, engine, propeller, and appliance means a record that contains, at least, the following information:

(a) Time-in-service since new expressed in the appropriate parameter (hours, cycles, calendar time, etc.).

(b) The time-in-service remaining to the specified life limit expressed in the appropriate parameter (hours, cycles, calendar time, etc.).

(c) The specified life limit expressed in the appropriate parameter (hours, cycles, calendar time, etc.).

(d) A record of any action that alters the part’s life limit or changes the parameter of the life limit.

(3) The listing of the time “since last overhaul” means a record that contains at least the following information:

(a) A listing of the item required to be overhauled, and its associated scheduled overhaul interval.

(b) The time-in-service since the last overhaul.

(c) The time-in-service remaining to the next scheduled overhaul.

(d) The time-in-service when the next scheduled overhaul is due.

**NOTE: The listing of “time since overhaul” refers to summary current status information and must not be confused with an overhaul record, which is a description of the work performed and the identification of the person who performed and/or issued the approval for return to service.**

(4) The “current inspection status of the aircraft” means a record that contains, at least, the following information:

(a) A listing, identifying each of the scheduled inspection packages or groups and their associated intervals, that are required by the maintenance program under which the aircraft is maintained.

(b) The time-in-service accrued since the last accomplishment of each of the scheduled inspection packages or groups required by the maintenance program under which the aircraft is maintained.

(c) The time-in-service remaining to the next accomplishment of each of the scheduled inspection packages or groups required by the maintenance program under which the aircraft is maintained.

(d) The time-in-service when the next accomplishment of each of the scheduled inspection packages or groups required by the maintenance program under which the aircraft is maintained, is due.

(5) The “current status of an airworthiness directive” means a record that contains, at least, the following information:

(a) Identification of the particular airframe, engine, propeller, appliance, or component to which the AD is applicable.

(b) The airworthiness directive number (and/or regulatory amendment number).

(c) The date, and the time-in-service expressed in the appropriate measuring parameter (hours, cycles, calendar time, etc.), when the required action was accomplished.

(d) If the requirement is recurring, the time-in-service when the next action is due expressed in the appropriate measuring parameter (hours, cycles, calendar time, etc.).

(e) The “Method of Compliance” means, with regard to an airworthiness directive, a concise description of the action taken to comply with the requirements of the airworthiness directive. If the airworthiness directive or its referenced manufacturer’s service bulletin permits the use of more than one method of compliance, the record must include a reference to the specific method of compliance used. If the operator uses an alternate method of compliance to comply with an airworthiness directive, the method of compliance means a description of this alternate method of compliance and a copy of the FAA approval.

**NOTE: The listing of “current status of an airworthiness directive” or “method of compliance” refers to summary current status information and must not be confused with an AD record of accomplishment, which is a description of the work performed and the identification of the person who performed and/or issued the approval for return to service.**

(6) A listing of “the current major alterations of each airframe, engine, propeller, and appliance” means a record that contains, at least, the following information:

(a) A listing identifying each major alteration as well as the associated item to which the major alteration has been installed.

(b) A description, or reference to the FAA-approved technical data used to make the major alteration.

**NOTE: For part 135 air carriers, this listing includes all current major repairs, as well as a requirement for a listing of major repairs and alterations to each rotor.**

**NOTE: The listing of “all of the current major alterations” refers to summary current status information and must not be confused with a major alteration record, which is a detailed description of the work performed, a description of the FAA-**

approved technical data used to make the alteration, and the identification of the person who performed and/or issued the approval for return to service. This listing also must not be confused with the major alteration report which must be submitted in accordance with 14 CFR §121.707.

(7) "All the records necessary to show that all requirements for the issuance of an airworthiness release have been met." While the regulatory requirement for these records does not provide a detailed list of records required to be retained, this requirement is generally accepted to mean:

(a) Detailed records of all scheduled maintenance that has not been superseded by work of equivalent scope and detail.

(b) For those items required to be overhauled, detailed records of the accomplishment of the last overhaul.

**NOTE: An overhaul record is not required to contain a record of AD accomplishment. The regulations require records of AD current status and accomplishment to be made and preserved as a separate and distinct record.**

(c) Detailed records of all unscheduled maintenance that has not been superseded by work of equivalent scope and detail.

(d) Adequate copies of the maintenance log required under 14 CFR §§ 121.563, 121.701, and 135.65. Adequate copies are generally accepted to mean copies covering the last sixty days of operation. All of these items (1-7) are required, by regulation, to be kept and transferred with the aircraft when it is sold.

*B. Air Carrier Airworthiness Release.* The relevant air carrier regulations require that each time maintenance, preventive maintenance, or alterations are performed on an air carrier aircraft, an airworthiness release or log entry must be completed before the aircraft may be operated. In addition to the requirement to make an airworthiness release, part 121 air carriers are also required to give a copy of the airworthiness release to the pilot-in-command, and to keep a record of the airworthiness release for at least two months. However, an additional requirement contains a mandate that requires all of those records necessary to show that all of the requirements for the issuance of an airworthiness release have been met, must be retained until the work is superseded by work of equivalent scope and detail, or for at least one year after the work is performed. Notwithstanding the one year retention requirement, detailed records of accomplishment of the last overhaul for those items required to be overhauled by the air carrier's maintenance time limitations are required to be kept until the work is superseded by work of equivalent scope and detail.

## 9. OTHER REQUIRED RECORDS AND REPORTS.

Other reports and records required to be kept by air carriers are outlined in part 121, subpart V, as well as §§ 135.415, and 135.417. These reports are also used by the FAA in its continuous review of air carrier maintenance operations as a direct means of determining the adequacy of the content of the maintenance portion of the air carrier manual, the effectiveness of the air carrier maintenance program, as well as the continuing analysis and surveillance systems.

*A. Maintenance Log.* An aircraft maintenance log is required by §§ 121.563, 121.701, and 135.65. These sections require any person who takes action in response to a reported or observed failure or malfunction to make a record of that action in the maintenance log of the aircraft. In addition, §§ 121.563 and 135.65 require the pilot-in-command to ensure that all mechanical irregularities occurring during flight time are entered in the maintenance log at the end of that particular flight time.

*B. Mechanical Reliability Reports.* Mechanical reliability reports are required to be made by 14 CFR §§ 121.703 and 135.415. While these reports should be used by the air carrier to identify deficiencies within its air carrier maintenance program, these reports are also the primary means of gathering information for the FAA's Service Difficulty Reporting System.

*C. Mechanical Interruption Reports.* Mechanical Interruption Reports are required to be made by §§ 121.705 and 135.417. Essentially, these reports accent the significant issue of the inability of the aircraft to arrive at its scheduled destination due to mechanical difficulties. Moreover, these reports are one of the FAA's most effective means of determining the effectiveness of the continuous airworthiness maintenance program.

*D. Alteration and Repair Reports.* Title 14 CFR §121.707 outlines the regulatory requirement for air carrier Alteration and Repair Reports. A part 121 air carrier is required to prepare a report of each major alteration and each major repair made on its aircraft. Each report is required to be prepared promptly on completion of the repair or alteration. In addition, while the report of a major alteration is required to be submitted to the FAA principal maintenance inspector (PMI) assigned to the part 121 air carrier, the report of a major repair is not required to be submitted. However, the major repair report is required to be made available for inspection by the PMI. In addition, it should be noted that 14 CFR §43.9(b) permits an air carrier to use other than FAA Form 337 for reporting a major alteration or repair accomplished by it. The Major Alteration Report required by §121.707 should be submitted to the FAA in a timely manner and should contain, at least, the identification of the altered aircraft by registration number and serial number as well as the identification of the alteration and its technical data approval basis.

**NOTE: These Alteration and Repair Reports should not be confused with the current status listing of major alterations required under part 121 as well as the current status listing of major repairs and alterations required under part 135.**

**NOTE: A reporting requirement similar to §121.707 is not included in part 135.**

## **11. HISTORICAL AIRCRAFT MAINTENANCE**

**RECORDS.** Extensive and thorough research has been unable to discover a specific regulatory, or statutory requirement for the preparation, storage, and retention of historical or source records that may be used to authenticate or support required air carrier aircraft maintenance records, and in particular, air carrier current status records. However, under the federal statutes, the FAA is charged with the Public Trust involving the assurance of the safety of flight as well as the airworthiness of civil and commercial aircraft. Aircraft maintenance records and summary current status information are used by the FAA as the primary and most direct means of determining the airworthiness and safety of aircraft. As described in paragraph 5, the level of importance of air carrier maintenance records is emphasized by the statutory designation of the act of willful falsification or alteration of these records as a criminal offense. The importance of accurate air carrier aircraft maintenance records cannot be overstated. In view of the severe penalties involved with falsification or alteration of required aircraft records, the FAA expects these current status information records to be complete as well as accurate. Of course, in order that the FAA may adequately discharge its safety and airworthiness oversight duties under the federal statutes, it must have a high level of confidence in air carrier aircraft maintenance records. Moreover, the FAA's level of confidence in current status records produced by an air carrier's maintenance recordkeeping system and monitored by that air carrier's continuous analysis and surveillance system is clearly higher than it would be for those records

produced by no system or by a system that is not monitored by the FAA. Therefore, unless there is evidence to the contrary, an aircraft maintenance record produced by an air carrier's maintenance recordkeeping system should be acceptable by itself, i.e., without historical or source records. It must also be noted that there is no regulatory or statutory basis that can be used to require or force an operator of an aircraft to produce or maintain records that are not required to be made by any regulations or by any statute. For its aircraft maintenance recordkeeping system, the air carrier must develop and use detailed documentation and source requirements and procedures for administrative handling of aircraft components and parts. These requirements and procedures must be clearly identified in the air carrier's manual. These source and documentation requirements may include, but are not limited to, documentation of AD compliance, life-limited parts current status information, description of maintenance performed, and appropriate certification of new and repaired parts. Once these requirements are satisfied and the essential information is entered into the air carrier's recordkeeping system, the documentation and source information required to be retained as necessary to support the continuing analysis and surveillance system or that which may be required to integrate the part into the air carrier's continuous airworthiness maintenance program, or that which is required to support future maintenance on the affected parts, such as detailed shop records or FAA-approved technical data. Of course, those specific air carrier maintenance records required to be retained for a specific period of time by the regulations are also required to be retained. However, a prudent air carrier may wish to archive certain source documentation records which were used to introduce parts into the air carrier's system. These may be records such as the manufacturer's invoice for new parts, export certificates of airworthiness, documentation of a major repair, or other similar information that may be considered to be useful in the future.

## SECTION 2. PROCEDURES

### 1. PREREQUISITES AND COORDINATION REQUIREMENTS.

- Knowledge of, and working experience with, the air carrier maintenance recordkeeping requirements of 14 CFR part 121 and part 135, and recordkeeping systems
- Successful completion of Airworthiness Inspector's Indoctrination Course for General Aviation and Air Carrier Inspections, or previous equivalent

### 3. REFERENCES, FORMS, AND JOB AIDS.

#### A. References:

- 14 CFR part 43,
- 14 CFR part 121, subpart G, L, and V
- 14 CFR part 135, subpart B, and J
- FAA Order 2150.3A, Compliance and Enforcement Program
- 49 U.S.C., section 46310, Reporting and Recordkeeping Violations
- 18 U.S.C., section 1001, Statements or Entries Generally
- 18 U.S.C., section 3571, Sentence of Fine

#### B. Forms. None.

#### C. Job Aids. None.

### 5. PROCEDURES.

A. *Overview.* During initial certification of an air carrier, the air carrier is required to establish an aircraft maintenance recordkeeping system, and to develop a section in its manual that provides a description of the system as well as detailed instructions for the use of that recordkeeping system. The PMI should ensure that the air carrier's manual contains a description or overview of the recordkeeping system. In addition, the air carrier's initial compliance statement should clearly identify the detailed procedures contained in the air carrier manual to be used for the generation, storage, retention, and retrieval of aircraft maintenance records. The air carrier manual maintenance recordkeeping procedures should be written in such a manner that a consistent format is followed. Clear, concise, and accurate procedures and information should be described. Any ambiguities are considered unacceptable. After certification, the PMI or his designee shall conduct surveillance of an air carrier's aircraft maintenance recordkeeping system on a routine basis to ensure that accurate records are being produced and maintained as well as being able to be retrieved in accordance with the system. The PMI shall also ensure that the aircraft maintenance records continue to

contain the information necessary to show compliance with the regulations.

B. *System Evaluation.* Accomplish an evaluation of the aircraft maintenance reporting and recordkeeping system described in the air carrier's manual. In addition to the general requirements described above, this required system must include the procedures, information and instructions necessary to allow the personnel concerned to perform their duties and responsibilities with a high degree of safety. The general regulatory requirements for an air carrier maintenance recordkeeping system are that the system must be suitable, that the system must provide for the preservation and retrieval of information in a manner acceptable to the administrator, and that, with regard to maintenance work performed, the system includes procedures that ensure that maintenance records includes, at least:

(1) A description (or reference to data acceptable to the Administrator) of the work performed;

(2) The name of the person performing the work if the work is performed by a person outside the organization of the air carrier.

(3) The name or other positive identification of the individual approving the work. However, the PMI should also ensure that the system addresses both types of aircraft maintenance records, i.e., records to show that all requirements for the issuance of an airworthiness release have been met, as well as the record of current status summary information. The current status summary information should contain, at least, that information described in section 1, paragraph 7 of this chapter.

C. *Procedures Review.* Accomplish a review of the maintenance recordkeeping procedures contained in the air carrier's manual. During the review, the reviewing inspector should keep in mind that although each air carrier's system is required to meet the same requirements, the recordkeeping system and procedures developed and used by each individual air carrier to meet those requirements may be quite different from one another, yet still comply with the regulations. The reviewing inspector must also keep in mind that the recordkeeping procedures must address the generation, storage, retention, and retrieval of records of all maintenance and alterations, whether the maintenance or alteration was accomplished by authorized air carrier personnel or by authorized persons outside of the air carrier's organization. The procedures must clearly identify the particular person(s), by job title or description, who are responsible for carrying out each particular function of the program. In addition, the air carrier's maintenance recordkeeping procedures must not be contrary to the regulations, nor should the manual contain procedures which allow activity that results in de facto exemptions to selected

regulatory sections of the CFRs. An air carrier maintenance recordkeeping system is required to include, at least, methods and detailed procedures for the generation, storage, retention, and retrieval of:

- (1) Records of scheduled maintenance;
- (2) Records of unscheduled maintenance;
- (3) Records of shop maintenance;
- (4) Records of engine and/or propeller shop maintenance;
- (5) Records of the airworthiness release described in 14 CFR §§ 121.709 and 135.443;
- (6) All records necessary to show that all requirements for the issuance of the airworthiness release described in §§ 121.709 and 135.443, have been met;
- (7) The mechanical reliability reports;
- (8) The mechanical interruption reports;
- (9) The major alteration report;
- (10) The major repair report; and
- (11) The current status summary information describing:
  - (a) The total time-in-service of the airframe, each engine, and each propeller, and for part 135 air carriers, each rotor;

- (b) The current status of each life-limited part of each airframe, engine, propeller, and appliance, and for part 135 air carriers, each rotor;

- (c) The time since overhaul of each item required to be overhauled;

- (d) The current inspection status of the aircraft;

- (e) The current status of each applicable airworthiness directive;

- (f) A list of all of the major alterations; and

- (g) For part 135 air carriers, a list of all of the major repairs.

*D. Analyze the Findings.* Evaluate all findings to determine the corrective action that is required and initiate action to achieve those corrective actions.

## 7. TASK OUTCOMES.

*A. File PTRS Data Sheet.*

*B. Successful Completion of this Task will Result in the Following:*

- A letter to the applicant outlining the results of evaluation
- Continuation of the certification process

*C. Document the Task.* File all supporting paperwork in the air carrier's office file.

**9. FUTURE ACTIVITIES.** Schedule follow-up inspections as required and/or in compliance with National Work Program Guidelines.